

REMARKS

Applicant and his representatives thank the Examiner and her supervisor, Jeff Fredman, for the courtesy of a telephone interview on May 6, 2004. This amendment addresses substantive points discussed during the interview. Accordingly, this amendment constitutes a complete written statement of the reasons presented in the interview as warranting favorable action, as discussed in detail below.

Claim 1 has been amended to incorporate the limitation from claim 2 that the second SNP is analyzed by hybridization, and furthermore, that hybridization occurs with labeled ASOs from solution. Support for this amendment may be found in the specification, for example, on page 12, lines 17-20. Thus, no new matter has been added. Claim 2 has been correspondingly cancelled.

Additionally, Claims 11 and 14, which originally depended from claim 2, have been rewritten to depend from claim 1. Furthermore, due to the amendments to claim 1, claims 24 and 28 have been cancelled. Applicant reserves the right to pursue the subject matter of these claims as pending, prior to cancellation or amendment herein, in one or more continuation applications claiming priority to the instant application.

Claim 3 has been amended to clarify that the ASO fixed to the surface is used to capture the nucleic acid for analysis of the first SNP. Support for this amendment may be found in the specification, for example, on page 12, lines 17-20. No new matter has been added.

Claim 26, which was inadvertently presented as being dependent from claim 1, has been corrected to depend from claim 25. The term "the RNA genome" in claim 26 is provided with antecedent support in claim 25.

Claims 1, 3-22, 25-27 and 65 are now pending for examination.

Rejection of Claims 1-4, 6-7, 11, 14, 16, 18, 19, 22, 23, 25-28, and 65 under 35 U.S.C. §102(e)

Claims 1-4, 6-7, 11, 14, 16, 18, 19, 22, 23, 25-28, and 65 were rejected under 35 U.S.C. §102(e) as being anticipated by Gentalen, et al., U.S. Patent No. 6,306,643 ("Gentalen").

As an initial matter, Applicant does not concede that Gentalen is properly prior art to the claimed invention prior to amendment herein.

In the interview of May 6, 2004, the merits of Gentalen were discussed. It was agreed that Gentalen nowhere suggests or discloses analysis of a second SNP to determine the haplotype of a captured nucleic acid by hybridizing the nucleic acid with a labeled ASO from solution. Instead, Gentalen uses a pooled probe technique, i.e., Gentalen uses an array of polynucleotide probes fixed to a surface in order to determine the haplotype. Thus, it is believed that Gentalen does not anticipate the claimed invention, and it is respectfully requested that the rejection of independent claim 1, and the dependent claims that depend therefrom, be withdrawn for at least these reasons.

Rejection of Claims 1-4, 6, 7, 11, 14, 16, 18-22, 25, 27, and 65 under 35 U.S.C. §103(a)

Claims 1-4, 6, 7, 11, 14, 16, 18-22, 25, 27, and 65 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sapolsky et al., U.S. Patent No. 5,858,659 ("Sapolsky") in view of Murphy et al., WO 99/09164 ("Murphy").

As discussed in the interview of May 6, 2004, it was agreed that Sapolsky discloses a chip for genotyping, using oligonucleotides attached to a surface, while Murphy describes certain BRCA2 gene polymorphisms. The combination of Sapolsky and Murphy, to the extent such a combination could be made, would be ineffective, as the method of Sapolsky is only usable to detect genotypes, and cannot be used to detect haplotypes. For example, Sapolsky teaches that two strands of the target sequence are required for detection (e.g., column 6, lines 15-18). Accordingly, it is respectfully requested that the rejection of independent claim 1 and the dependent claims that depend therefrom be withdrawn.

Rejection of Claims 5, 9, and 10 under 35 U.S.C. §103(a)

Claims 5, 9, and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sapolsky and Murphy and also Gentalen in view of Newton, U.S. Patent No. 5,525,494 ("Newton").

As discussed above, the premises of the respective rejections of Gentalen and Sapolsky/Murphy are believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Sapolsky with Murphy, or Gentalen with

Newton, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claims 5, 9, and 10 is respectfully requested.

Rejection of Claims 5, 8, 12, and 13 under 35 U.S.C. §103(a)

Claims 5, 8, 12, and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sapolsky and Murphy and also Gentalen in view of Walt, et al., U.S. Patent No. 6,327,410 ("Walt").

As discussed above, the premises of the respective rejections of Gentalen and Sapolsky/Murphy are believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Sapolsky with Murphy, or Gentalen with Walt, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claims 5, 8, 12 and 13 is respectfully requested.

Rejection of Claim 15 under 35 U.S.C. §103(a)

Claim 15 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sapolsky and Murphy and also Gentalen in view of Arnold, et al., U.S. Patent No. 6,410,231 ("Arnold").

As discussed above, the premises of the respective rejections of Gentalen and Sapolsky/Murphy are believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Sapolsky with Murphy, or Gentalen with Arnold, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claim 15 is respectfully requested.

Rejection of Claim 17 under 35 U.S.C. §103(a)

Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sapolsky and Murphy and also Gentalen in view of Pinkel, et al., U.S. Patent No. 6,210,878 ("Pinkel").

As discussed above, the premises of the respective rejections of Gentalen and Sapolsky/Murphy are believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Sapolsky with Murphy, or Gentalen with Pinkel, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claim 17 is respectfully requested.

Rejection of Claim 24 under 35 U.S.C. §103(a)

Claim 24 was rejected under 35 U.S.C. §103(a) as being unpatentable over Sapolsky and Murphy and also Gentalen in view of Caskey (believed to be U.S. Patent No. 6,153,379) ("Caskey").

As discussed above, the premises of the respective rejections of Gentalen and Sapolsky/Murphy are believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Sapolsky with Murphy, or Gentalen with Caskey, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claim 24 is respectfully requested.

Rejections of Claims 1-3, 5-8, 11, 12, 14, 18-22, 24, and 65 under 35 U.S.C. §102(e)

Claims 1-3, 5-8, 11, 12, 14, 18-22, 24, and 65 were rejected under 35 U.S.C. §102(e) as being anticipated by Dapprich, et al., International Application WO 01/42510 and Dapprich, et al., U.S. Patent Application Publication No. 2001/0031467. These references appear to be substantially identical, and will be referred to herein as "Dapprich."

At the outset, Applicant does not concede that Dapprich is properly prior art to the Applicant's claimed invention prior to amendment herein. Applicant reserves the right to establish an invention date for the claimed invention that is on or before the effective 35 U.S.C. §102(e) date of Dapprich.

As discussed in the interview on May 6, 2004, it was agreed that Dapprich does not disclose or suggest a method of hybridizing a nucleic acid with an ASO or capturing a nucleic acid on a surface using an ASO to identify an allele. Thus, the techniques disclosed in Dapprich would not be able to identify alleles in the manner claimed in claim 1. It is therefore believed that Dapprich does not anticipate the invention as claimed, and it is respectfully requested that the rejection of independent claim 1, and the dependent claims that depend therefrom, be withdrawn for at least these reasons.

Rejection of Claims 4, 13, 15, and 16 under 35 U.S.C. §103(a)

Claims 4, 13, 15, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dapprich in view of Arnold.

As discussed above, the premise of the rejection of Dapprich is believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Dapprich with Arnold, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claims 4, 13, 15, and 16 is respectfully requested.

Rejection of Claims 9 and 10 under 35 U.S.C. §103(a)

Claims 9 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dapprich in view of Newton.

As discussed above, the premise of the rejection of Dapprich is believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Dapprich with Newton, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claims 9 and 10 is respectfully requested.

Rejection of Claim 17 under 35 U.S.C. §103(a)

Claim 17 was rejected under 35 U.S.C. §103(a) as being unpatentable over Dapprich in view of Pinkel.

As discussed above, the premise of the rejection of Dapprich is believed to be incorrect. Accordingly, while Applicant does not concede that there would have been any motivation to combine Dapprich with Pinkel, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claim 17 is respectfully requested.

Rejection of Claims 25-28 under 35 U.S.C. §103(a)

Claims 25-28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Dapprich in view of Gentalen.

As discussed above, the premises of the respective rejections of Dapprich and Gentalen are believed to be incorrect. Accordingly, while Applicant does not concede that there would

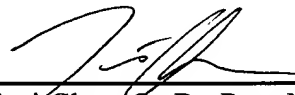
have been any motivation to combine Dapprich with Gentalen, the present rejection cannot stand, regardless. Thus, withdraw of the rejection of claims 25-28 is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's representatives at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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